REMARKS

Claims 6, 9-11, 13 and 22-75 are pending in the above-captioned patent application following this amendment. Claims 6, 9-11, 13 and 22-75 have been rejected. The applicants respectfully traverse the rejection of these claims.

No new matter is believed to have been added by this response. Consideration of the pending application is respectfully requested.

Rejections Under 35 U.S.C. § 102

Claims 6, 9-11, 13 and 22-74 are rejected under 35 U.S.C. § 102(e) (erroneously stated in the Office Action as a rejection under 35 U.S.C. § 102(b)) as being anticipated by Khan et al. (USPN 6,188,548). The Applicants respectfully submit that Khan et al. does not support a rejection of these claims because Khan et al. does not teach or suggest the features of claims 6, 9-11, 13 and 22-74, as provided below.

The Patent Office asserts that "...Khan et al. shows (Figs 1-5) a head stack assembly for a disc drive including ... a transducer assembly including a load beam (10), a flexure (12) secured to the load beam, a data transducer (40) secured to the flexure (12), a separately formed base plate securing the transducer assembly to the actuator arm, and a fine positioner (piezoelectric elements) secured directly to the base plate, the fine positioner moving a portion of the base plate relative to the actuator arm, wherein the base plate further comprises a positioner cavity (23) that receives the fine positioner, the proximal and distal ends are secured under compression, a flex section (224, 226) positioned adjacent to the positioner cavity, the flex section allowing the base plate to flex, a pair of spaced apart positioner cavities (Fig. 1) that receive the fine positioner, a pair of flex sections that allow the base plate to flex ... ." The applicants respectfully submit that this reading of Khan et al. is inaccurate.

Khan et al. is directed toward a disk drive suspension that includes a load beam 10 that is supported by a mount plate 14 having a boss 16. (Col. 5, lines 11-14). The load beam 10 includes a base portion 18, a spring portion 20 and a beam portion 22 that carries a slider 40. (Col. 5, lines 14-16; Figs. 1-3 and 5). The Applicants submit that the mount plate 14, and more particularly the mount plate boss 16, fixes the base portion of the load beam to the actuator arm. Importantly, the mount plate boss 16 is <u>not</u> part of the

load beam 10, but is a separate structure. Further, piezoelectric crystals 32, 34 are bonded to the base portion 18 and the beam portion 22 of the load beam 10. (Col. 5, lines 17-20; Figs. 1-5). Moreover, the spring portion 20 of the load beam 10 includes arcuate sections 36, 38 that are connected to the base portion 18 of the load beam 10 and the beam portion 22 of the load beam 10. (Col. 5, lines 31-42; Figs. 1-5).

Khan et al. does not teach or suggest a separately formed base plate that secures the load beam to the actuator arm, with the base plate including one or more flex sections. Further, Khan et al. does not teach or suggest securing a fine positioner (e.g. a piezoelectric element) to a separately formed base plate. Because the piezoelectric crystals 32, 34 are secured to the load beam instead of the base plate, the piezoelectric crystals 32, 34 are subject to more severe bending than if the fine positioner were secured to the base plate because of the relative thicknesses of the load beam versus the base plate. As a result thereof, more changes to the design of the head stack assembly are required because the piezoelectric crystals 32, 34 are added directly to the load beam.

Additionally, the location of the piezoelectric crystals 32, 34 more distally along the head-arm assembly increases the likelihood of adverse resonance characteristics of the head stack assembly. Moreover, the location of the piezoelectric crystals 32, 34 can increase head gram load loss depending upon the gravitational orientation of the head-arm assembly relative to the storage disk. Further, Khan et al teaches that the piezoelectric crystals 32, 34 are placed in sheer mode instead of a compression mode. In the sheer mode, the piezoelectric crystals 32, 34 are less resilient to shock loads and vibration. This increases the incidence of piezoelectric crystals 32, 34 stress cracking and reduces the reliability of the piezoelectric crystals 32, 34.

In addition, because of the placement of the piezoelectric crystals 32, 34 on the load beam rather than the base plate, the life of the fine positioner is decreased. The thickness of the base plate is typically three to five times greater than the load beam. As a result of this design, the load beam is more flexible when compared to the base plate and the piezoelectric crystals 32, 34 are therefore somewhat less protected from shock and vibration.

In contrast to Khan et al., claim 6 requires a "head stack assembly ... comprising: an actuator arm; a coarse positioner that moves the actuator arm relative to the storage

disk; a transducer assembly including a load beam, a flexure secured to the load beam, and a data transducer secured to the flexure; a separately formed base plate securing the transducer assembly to the actuator arm, the base plate including (i) one or more edges, (ii) a pair of flex sections that cantilever away from at least one of the edges, the flex sections allowing the base plate to flex, and (iii) a pair of spaced apart positioner cavities that are positioned between the flex sections; and a fine positioner secured to the base plate, the fine positioner being positioned in the positioner cavities, the fine positioner moving a portion of the base plate relative to the actuator arm." As provided above, these features are not taught or suggested by Khan et al. Therefore, Khan et al. does not support a rejection of claim 6. Because claims 9-11 and 13 depend directly or indirectly from claim 6, Khan et al. likewise does not support a rejection of these claims, and the rejection should therefore be withdrawn.

Claim 22 of the present application is directed to a disk drive that requires "an actuator arm; a transducer assembly including a load beam and a data transducer coupled to the load beam; a separately formed base plate that secures the transducer assembly to the actuator arm, the base plate including a flex section that allows the base plate to flex; and a fine positioner that is secured to the base plate so that the fine positioner does not contact the flex section, the fine positioner selectively flexing at least a portion of the base plate." These features are not taught or suggested by Khan et al. Therefore, Khan et al. does not support a rejection of claim 22. Because claims 23-36 depend directly or indirectly from claim 22, Khan et al. likewise does not support a rejection of these claims, and the rejection should therefore be withdrawn.

Claim 37 requires "an actuator arm; a transducer assembly including a load beam and a data transducer coupled to the load beam; a separately formed base plate that secures the transducer assembly to the actuator arm; and a first piezoelectric motor having a proximal end and a distal end, that ends being secured to the base plate so that the first piezoelectric motor is under compression, the first piezoelectric motor moving a portion of the base plate relative to the actuator arm." These features are not taught or suggested by Khan et al. Therefore, Khan et al. does not support a rejection of claim 37. Because claims 38-49 depend directly or indirectly from claim 37, Khan et

al. likewise does not support a rejection of these claims, and the rejection should therefore be withdrawn.

Claim 50 is directed toward a disk drive that requires "an actuator arm; a transducer assembly including a load beam and a data transducer coupled to the load beam; a separately formed base plate that secures the transducer assembly to the actuator arm, the base plate including a plate mount that secures the base plate to the actuator arm; and a pair of piezoelectric motors that are each secured to the base plate between the plate mount and the data transducer, the piezoelectric motors being substantially parallel to each other, the piezoelectric motors moving a portion of the base plate relative to the actuator arm." These features are not taught or suggested by Khan et al. Therefore, Khan et al. does not support a rejection of claim 50. Because claims 51-58 depend directly or indirectly from claim 50, Khan et al. likewise does not support a rejection of these claims, and the rejection should therefore be withdrawn.

Claim 59 requires "an actuator arm; a transducer assembly including a load beam and a data transducer coupled to the load beam; a separately formed base plate that secures the transducer assembly to the actuator arm, the base plate including a positioner cavity that extends through the base plate; and a fine positioner that is secured to the base plate so that the fine positioner is positioned over at least a portion of the positioner cavity, the fine positioner selectively flexing at least a portion of the base plate." These features are not taught or suggested by Khan et al. Therefore, Khan et al. does not support a rejection of claim 59. Because claims 60-66 depend directly or indirectly from claim 59, Khan et al. likewise does not support a rejection of these claims, and the rejection should therefore be withdrawn.

Claim 67 of the present invention is directed toward a method that requires "securing a transducer assembly to an actuator arm with a separately formed base plate having a flex section that flexes; securing a fine positioner to the base plate so that the fine positioner is not in contact with the flex section; and flexing the flex section with the fine positioner to cause at least a portion of the base plate to move relative to the actuator arm." These steps are not taught or suggested by Khan et al. Therefore, Khan et al. does not support a rejection of claim 67. Because claims 68-74 depend directly or

indirectly from claim 67, Khan et al. likewise does not support a rejection of these claims, and the rejection should therefore be withdrawn.

Rejections Under 35 U.S.C. § 103

Claim 75 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Khan et al. in view of Ohwe et al (US 6,594,116). The Applicants respectfully traverse the rejection of claim 75 on the grounds that the cited combination of references does not support such a rejection, and that the cited combination does not teach or suggest the features of the rejected claim.

The Patent Office states in its rejection that "Khan et al shows all the features described, supra, but does not show a load beam where the base plate, which is at least approximately three times the thickness of the lead beam. Ohwe shows ... that a load beam can be a thickness ranging between 0.02 to 0.08 mm, which when combined with Khan et al. would make the base plate at least approximately three times the thickness of the load beam."

The Applicants respectfully disagree with this rationale for several reasons. First, even if Ohwe shows that a load beam has a thickness ranging between 0.02 to 0.08 mm, Khan et al does not teach or suggest use of a base plate, nor does Khan et al indicate what the thickness of a base plate would or should be. Thus, the combination does not teach or suggest having a base plate that is at least approximately three times the thickness of the load beam.

Second, the Patent Office identifies in its Office Action what it believes is the "separately formed base plate" 18 in Khan et al. However, base portion 18 in Khan has a thickness that does not appear any different, i.e. thicker or thinner, than the remainder of the load beam 10. In fact, Applicants submit that base portion 18 is part of the load beam 10, and is not a separate structure that secures the load beam to the actuator arm. This is supported by a clear reading of Khan et al, which states that "load beam 10 has a base portion 18, fixed on mount plate boss 16, a spring portion 20 and a beam portion 22 carrying a slider 40." (Col. 5, lines 14-17). However, assuming for the sake of argument that the base portion 18 is a "base plate" (which Applicants strongly dispute), the thickness of the base portion 18 is the same as the thickness of the load

beam 10. Combining the structure taught by Khan et al with the load beam disclosed in Ohwe et al, would not provide a ratio of the thickness of the base plate relative to the load beam as the Patent Office suggests. Thus, the cited combination does not teach or suggest having a base plate that is at least approximately three times the thickness of the load beam.

Third, the Applicants submit that there is no motivation to use the device taught by Ohwe et al in Khan et al's device. "The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in the applicant's disclosure." *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991; Emphasis added). In the present case, neither is found.

Even if the combination of references taught every element of the claimed invention (which it does not), without a motivation to combine, a rejection based on a prima facie case of obviousness has been held improper. *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998). Further, the "mere fact that references *can* be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination." *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990; emphasis original and added).

In the present case, the prior art does not clearly suggest the desirability of the resultant combination. In addition to the description of Khan et al. provided above, including the distinguishing feature that the piezoelectric crystals in Khan et al. are positioned on the load beam instead of a separately formed base plate, the applicants submit that Khan et al. does not teach or suggest positioning one or more piezoelectric crystals on a base plate having a thickness that is at least three times the thickness of the load beam. In short, regardless of the thickness of the base plate taught by Ohwe et al., neither Khan et al. nor Ohwe et al. teaches placement of the piezoelectric crystals on the base plate. In fact, Ohwe et al. does not teach or suggest using piezoelectric crystals, or any fine positioner, anywhere in the entire apparatus. Thus, combining Khan et al. and Ohwe et al. (assuming there was some suggestion to do so, which Applicants dispute) still does not teach or suggest the features of the rejected claim.

Additionally, there does not appear to be any motivation to use to the load beam taught by Ohwe et al with the base portion 18 (which is actually part of the load beam

10) taught by Khan et al. The Applicants submit that there is no clear purpose to combining two load beams. On the other hand, assuming the Patent Office's position is that the load beam 1 in Ohwe et al should be combined with the mount plate 14 taught by Khan et al, the Applicants submit that the mount plate 14 is a separate structure from the load beam 10, and that no piezoelectric crystals are secured to this separate structure 14, in direct contrast with rejected claim 75.

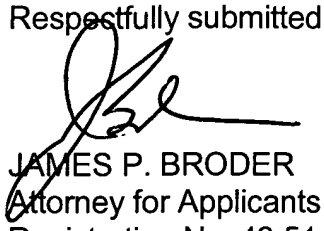
In contrast to the cited references, claim 75 is directed toward a disk drive that requires "an actuator arm; a data transducer; a load beam that is coupled to and supports the data transducer, the load beam having a thickness; a base plate that secures the transducer assembly to the actuator arm, the base plate having a thickness that is at least approximately three times the thickness of the load beam, the base plate including a flex section that allows the base plate to flex; and a fine positioner that is secured to the base plate so that the fine positioner does not contact the flex section, the fine positioner selectively flexing at least a portion of the base plate." These features are not taught or suggested by the cited combination of references. Therefore, the combination of references does not support a rejection of claim 75, and the rejection should be withdrawn.

CONCLUSION

In conclusion, Applicants respectfully assert that claims 6, 9-11, 13 and 22-75 are allowable for the reasons set forth above, and that the application is now in a condition for allowance. Accordingly, an early notice of allowance is respectfully requested. The Examiner is requested to call the undersigned at 858-487-4077 for any reason that would advance the instant application to issue.

Dated this 6th day of April, 2005.

Respectfully submitted,



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